

REMARKS

Upon entry of this Response, claims 1-55 are pending in this application.

102 Rejections

The Examiner has rejected claims 1, 4, 13-27, 37-41, and 44-49 under 35 U.S.C. §102(b) as being anticipated by Medrick (3,828,745). Applicants respectfully disagree. Applicants note that claims 8-12 are not listed by the Examiner as being rejected in view of Medrick, but that the Examiner addresses claims 8-12 with respect to Medrick on page 3 of the Office action. Thus, Applicants are treating claims 8-12 as also being rejected under 102(b) as anticipated by Medrick.

Independent claim 1 recites an internal combustion engine including, among other things, a thermally conductive assembly in direct contact with exhaust gases produced by the engine, and a thermally responsive member in thermal communication with the thermally conductive assembly such that the thermally conductive assembly transfers heat from the exhaust gases to the thermally responsive member. The Examiner states on page 2, paragraph 2 of the Office action that Medrick discloses an internal combustion engine having a thermally conductive assembly (exhaust gas, pipe 90, and housing 41) in direct contact with exhaust gases produced by the engine. Applicants disagree with the Examiner's characterization of Medrick.

With reference to the specification of Medrick, the automatic choke control mechanism 40 includes a choke housing 41 that is provided with a hot air passage 90. The passage 90 is connected to an exhaust manifold heat stove 92 which supplies a stream of hot air to the mechanism 40 a short time after the engine is started (see Col. 3, lines 53-60). An exhaust passage 94 is located centrally of the housing 41 and communicates with the intake manifold 18 of the carburetor. The heated air that enters the passage 90 exits the housing 41 via the exhaust passage 94 (see Col. 4, lines 5-9). The heated air from the stove 92 is injected into the cavity formed by the housing 41 and passes over the thermostatic bimetal spring 86 to transfer heat from the hot air into the spring 86 to effect opening of the choke valve 28 as soon as hot air is available in the heat stove 92 (which occurs shortly after the engine is started – see Col. 4, lines 15-38).

A stove is defined as a device that produces heat for specialized, especially industrial, purposes (see The American Heritage Dictionary of the English Language, Fourth Edition,

copyright 2000). The apparatus of Medrick places a heat stove in communication with the exhaust manifold such that the exhaust gases produced by the engine heat the air within the heat stove, and this heated air is passed into the housing and into contact with the bimetal spring. The heated air is different from the exhaust gases, as recognized in Medrick by the fact that the patentee only refers to the “hot air” that is passed into the housing, and never mentions the passage of the exhaust gases themselves.

Thus, there is no direct contact between the exhaust gases of Medrick and the assembly that operates the choke valve. The Medrick thermally conductive assembly is not getting the direct heat of the exhaust gases due to direct contact with the exhaust gases, but rather relies on the exhaust gases to heat up air within the stove, and then the heated air is passed onto the thermally conductive assembly. The extra time needed to heat the air within the stove results in a choke operating device that is less responsive than one in which there is direct contact with the exhaust gases, as claimed by Applicants. Further, the extra materials needed to make the heat stove and conduit to the housing increase the amount of surface area from which heat generated by the engine can escape into the ambient atmosphere of the engine, further decreasing the responsiveness of the automatic choke device as less of the heat from the exhaust gases will be passed onto the choke operating device.

Thus, Medrick does not teach or suggest each and every element of independent claim 1. Claims 2-24 depend from claim 1 and are thus allowable for the reasons discussed with respect to claim 1, as well as for other reasons not discussed herein.

Independent claim 25 recites an automatic choke apparatus coupled to an internal combustion engine. The automatic choke apparatus includes, among other things, a thermally conductive assembly in direct contact with exhaust gases produced by the engine. As discussed above with respect to claim 1, Medrick does not teach or suggest a thermally conductive assembly that is in direct contact with the exhaust gases produced by the engine. The arguments made with respect to claim 1 apply equally to claim 25. Thus, Medrick does not teach or suggest each and every element of claim 25. Claims 26-43 depend from claim 25 and are thus allowable for the reasons discussed with respect to claim 25, as well as for other reasons not discussed herein.

Independent claim 44 recites a method of operating a choke in an internal combustion engine. The method includes, among other things, placing a thermally conductive assembly in

direct contact with exhaust gases produced by the engine, and transmitting heat from the exhaust gases to the thermally conductive assembly through a solid material. As discussed above with respect to claim 1, Medrick does not teach or suggest a method of operating a choke that includes placing the thermally conductive assembly in direct contact with the exhaust gases. Further, Medrick does not teach transmitting heat from the exhaust gases to the thermally conductive assembly through a solid material. Rather, Medrick teaches heating a gaseous material (i.e., air) and passing the heated gases over the thermally conductive assembly to transmit the heat from the exhaust gases. For these reasons, Medrick does not teach or suggest each and every element of claim 44. Claims 45-49 depend from claim 44 and are thus allowable for the reasons discussed with respect to claim 44, as well as for other reasons not discussed herein.

The Examiner has also rejected claims 50-52 and 55 under 35 U.S.C. §102(b) as being anticipated by Dykstra (6,145,487). Applicants respectfully disagree.

Independent claim 50 recites a choke operating assembly for operating a choke valve in an internal combustion engine. The choke operating assembly includes, among other things, an air vane including a tab, and a choke linkage having a first choke arm and a second choke arm including a protrusion. The air vane, first choke arm, and second choke arm are integrally formed as a unitary body. With reference to Figs. 2-4 of Dykstra, the air vane 28 of Dykstra does not include a tab as claimed in claim 50. Further, there is no teaching or suggestion in Dykstra to integrally form the air vane, first choke arm, and second choke arm as a unitary body. Referring again to Figs. 2 and 3 of Dykstra, it is clear that the device of Dykstra utilizes an air vane 28, a first choke arm 34, and a second choke arm 36 that are separately formed components that are coupled together. Thus, Dykstra does not teach each and every element of claim 50. Claims 51-55 depend from claim 50 and are thus allowable for the reasons discussed with respect to claim 50, as well as for other reasons not discussed herein.

103 Rejections

The Examiner has also rejected claims 53 and 54 under 35 U.S.C. §103(a) as being unpatentable over Dykstra. As discussed above, claims 53 and 54 depend from independent claim 50, and are thus allowable for the same reasons as discussed with respect to claim 50, as well as for other reasons not discussed herein.

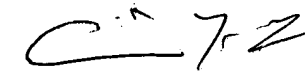
The Examiner has also rejected claims 2, 3, 5-7, and 28 under 35 U.S.C. §103(a) as being unpatentable over Medrick in view of Dykstra. The Examiner stated that it would have been obvious to utilize the air vane of Dykstra in the automatic choke apparatus of Medrick such that the apparatus is responsive to engine speed. Applicants note that claims 5-7 do not recite the use of an air vane, as suggested by the Examiner, and thus respectfully request withdrawal of the 103 rejection of claims 5-7. Claims 2 and 3 depend from independent claim 1 and are thus allowable for the reasons discussed above with respect to claim 1, as well as for other reasons not discussed herein. Claim 28 depends from independent claim 25 and is thus allowable for the reasons discussed above with respect to claim 25, as well as for other reasons not discussed herein.

Conclusion

Applicants respectfully submit that the claims are in condition for allowance. Withdrawal of the rejections and allowance of claims 1-55 is respectfully requested.

The Examiner is invited to contact the undersigned attorney should the Examiner determine that such action would facilitate the prosecution and allowance of the present application.

Respectfully submitted,



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